DOCUMENT RESUME

ED 031 585 VT 008 996

By-Crawford, Harold R.

Factors Affecting the Establishment of Young Farm Operators in Iowa and Implications for Agricultural Education.

Iowa State Univ. of Science and Technology, Ames. Dept. of Agricultural Education.
Spons Agency-Iowa State Dept. of Public Instruction, Des Moines. Div. of Vocational Education.
Pub Date 69
Note-34p.
EDRS Price MF-$0.25 HC-$1.80
Descriptors-*Agricultural Education, Agricultural Production, Doctoral Theses, *Educational Needs, Entry Workers, *Farmers, Individual Characteristics, Interviews, Occupational Information, Program Planning, *State Surveys, Young Adults, *Young Farmer Education
Identifiers-*Iowa

A stratified random sample of 307 young farm operators from the five farming areas of Iowa were interviewed to: (1) ascertain factors influencing the establishment of young farm operators, (2) estimate the number of young farm operators becoming established each year, (3) determine their agricultural education needs, (4) examine differences among the farming areas, and (5) determine the background and personal characteristics of young farm operators. Individuals between the ages of 18 and 30 were included in the sample population. Some findings were: (1) The population of young farmers in Iowa was estimated to be 13,630, (2) Their mean age was 26.2 years, (3) Three-fourths were high school graduates, (4) 88.7 percent participated in high school vocational agriculture programs, (5) Young farmers held an average of two occupations prior to farming, and (6) Participation in educational programs varied by farming area. Implications for education were derived in areas of educational needs, content of educational programs, methods in instructional programs, education for off-farm income and recommendations for young farmer education. This report is a consolidation of a doctoral theses submitted to the Iowa State University of Science and Technology. (DM)

ED031585

Ag. Ed. Research Publication No. 31

# FACTORS AFFECTING THE ESTABLISHMENT OF YOUNG FARM OPERATORS IN IOWA AND IMPLICATIONS FOR AGRICULTURAL EDUCATION

*Harold R. Crawford*

VT008996

Directed by

Clarence E. Bundy, Professor of Agricultural Education

Conducted
Under a grant from
Iowa Department of Public Instruction
Division of Vocational Education
(VEA-1963- 4(a) Ancillary Funds)

Department of Agricultural Education
Iowa State University
of Science and Technology
Ames, Iowa 1969

This is an abstract of a thesis submitted to the Iowa State University of Science and Technology by Harold Reid Crawford in partial fulfillment of the requirements for the degree of Doctor of Philosophy in May of 1969.

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

# FACTORS AFFECTING THE ESTABLISHMENT OF YOUNG FARM OPERATORS IN IOWA AND IMPLICATIONS FOR AGRICULTURAL EDUCATION

by

Harold R. Crawford

## PURPOSE OF THE STUDY

The objectives of this investigation were: (1) to ascertain the factors that influence the establishment of young farm operators in Iowa; (2) to estimate the number of young farm operators who become established in farming each year; (3) to determine the needs of young farm operators for agricultural education; (4) to determine the types of educational programs in agriculture that are needed by young farm operators; (5) to distinguish the differences in establishment of young farm operators by economic area of Iowa; (6) to determine the differences in educational needs of young farm operators by economic areas of Iowa; (7) to determine the background and personal characteristics of young farm operators in Iowa; and (8) to provide a source of information which will be helpful in program planning for educators in agriculture.

## METHOD OF PROCEDURE

The universe of interest for this study was all farm operators in Iowa who were between the ages of 18 and 30 inclusive as of December 31, 1968. They resided in the open country of the state and may have been farming by themselves or in partnership. To be classified as a young farm operator, an individual must have met the following criteria: (1) must have

received remuneration from profits (losses) from the farm business; (2) must have worked 90 or more days on the farm in 1968 in a partnership or shared management situation; (3) he was considered to be the operator if he worked less than 90 days and there was no other operator; and (4) he must have made or helped to make the management decisions in the operation and management of the farm.

Since the researcher intended to obtain lists of farmers meeting the age qualifications from the Agricultural Stabilization Conservation Service committeemen or other individuals having knowledge of the persons in their townships, it was decided to use townships as the sampling units and to interview all eligible farm operators in the sample townships. The state was stratified geographically into five areas according to the predominant type of farming - Western Livestock, Cash Grain, Northeast Dairy, Eastern Livestock, and Southern Pasture. As a means of conserving field costs, it was decided to select the samples within areas (strata) in two stages, first selecting a sample of counties and then selecting townships within the sample counties. The sample area consisted of four counties and two townships per sample county in the Northeast Dairy Area and four counties and three townships per sample county in each of the other areas. Within each stratum counties were selected with probability proportional to size in terms of the number of townships they contained; within each sample county the required number of townships was selected at random without replacement with equal probability. Within each sample township a sample of sections was drawn in a random manner at a rate of one out of six. The

interviewer canvassed the sample sections to determine whether or not they contained any eligible operators who were not on the original list.

Data were collected by personal interview from 307 young farm operators for an overall response rate of 95.6 percent. A questionnaire, or interview schedule, was developed to obtain accurate and complete information.

## FINDINGS

From the sample of 307 young farm operators who were farming in the 56 townships of 20 random selected counties stratified by economic area, the author was able to make estimates of the number of young farm operators in Iowa. The estimated mean number of young farmers, 30 years of age or under, was 8.54 per township, 149.09 per county, and 2726 per economic area. The Western Livestock Area of Iowa had the most young farm operators with 26.9 percent in that section. Only 14.6 percent of the young farmers were located in the Southern Pasture Area of Iowa. A population adjustment factor was used for each area so that the data could be reported accurately on a statewide basis. The data, therefore, was presented on the basis of 13,630 young farm operators for the state of Iowa.

The present mean age of all young farm operators was 26.2 years of age. Over one-half of the operators were 27 years of age or older, whereas less than 10 percent were under 23 years of age. The mean age when young farm operators started to farm was 21.6 years. Nearly three-fourths of the young men were high school graduates, but only 3 percent had been graduated from college; however, 4360, or 32 percent, had some post high school education. The largest group (55.2 percent) of those who enrolled in educational programs beyond high school attended a four year college or university. Two year colleges and trade schools accounted for 17.3

percent each.

Slightly over one-half of the young men were members of 4-H clubs and 58.2 percent of those members served as officers of their clubs. Vocational agriculture was available to 8737, or two-thirds of the young farmers; and 88.7 percent took advantage of this training in high school. There were 463 young men who did not attend high school. Young farm operators who had been enrolled for four years of high school vocational agriculture and 7 to 8 years of 4-H had derived the most benefit from their crops and livestock projects.

A total of 8618 fathers of the respondents, or 85.2 percent, were presently farming. There appeared to be a normal distribution of fathers by age with the largest number being in the 50 through 54 age bracket. Few fathers had occupations other than farming and 54.6 percent had an eighth grade education.

There were only 2063, or 15.1 percent, of the young farm operators who were single at the time the study was made. One-third of the married men were married before they started to farm, and 19.6 percent were married during the year they began farming. Eighty percent of the wives had a positive attitude toward farming and liked living on a farm. Nearly 60 percent of the married respondents indicated their wives assisted with the farm labor. Only 2282, or 19.8 percent, of the wives worked off the farm to supplement the farm income.

A total of 9607, or 70.4 percent of the 13,630 young farm operators, had some cash on hand before starting to farm. Nearly two-thirds of the respondents had $1000 or more, whereas 37.7 percent had more than $2000.

Sixty percent of the young farm operators owned some type of livestock prior to farming. Over one-half of the respondents in the study lived at home with their parents during their first year of farming; and the second largest group, 4744 or 34.8 percent, lived on the farm they rented or operated.

Relatives contributed in various ways toward the establishment of young farm operators in farming. Capital and machinery were mentioned more often than any other type of assistance received, and parents ranked first among all relatives as sources of assistance. Parents were also the key individuals when co-signers were needed for bank notes.

A total of 10,956 young farm operators had a number of occupations prior to the time they began farming, whereas 2675 or 19.7 percent did not have another occupation before they began farming. There was nearly an equal distribution among those who went directly to farming, 2674; those who held only agricultural occupations, 2668; and those who held only nonagricultural occupations, 2404. The remaining number, 5883 or 40.9 percent, held combinations of agricultural and nonagricultural occupations. Respondents had a mean number of two occupations prior to the time they began farming. Not only did the young farmers work in occupations other than farming before they began farming, but many men did off-farm work to supplement their income after beginning to farm. Custom farm work was a common way for the young farm operators to supplement their incomes. As the years of farming increased, the days worked off the farm decreased from 42 percent in the first year to only 1.7 percent in the twelfth year.

Three major sources of finance for the first year's farming operation

were the young farm operator himself, his father, and a lending agency. Over one-half of the respondents provided up to 25 percent of the needed finances and borrowed the remainder; whereas approximately one-third provided 75 to 100 percent of the finances. Young farm operators borrowed all types of machinery and equipment during their first year of farming. The parents were nearly the sole provider of machinery, and the young farm operator borrowed planting and harvesting equipment more than any other pieces of machinery. A majority of the respondents did not purchase any machinery their first year of farming.

The data from this study reveal a changing pattern in the age of young farm operators at the time of entry into farming. The mean age of all young farm operators was 21.6 years of age when they began farming. The largest group in the study (18.5 percent of 13,630 or 2520 young farmers) began farming when they were 18 years of age. There was an even distribution (10 percent) of the young farmers who started to farm in each age level of 19 through 23 years of age. Only 18.7 percent of the respondents began farming after they were 25 years of age.

The number of men who were farming as individual operators during their first year increased from 9543, or 70.0 percent, to 10,607, or 77.8 percent, during their current year of farming; whereas those who were farming in partnership during the first year, 3748 or 27.5 percent, decreased to 2278, or 16.7 percent, during their current year of farming. The number of men who farmed in a combination operation increased from 339, or 2.5 percent, in the first year to 745, or 5.5 percent, during the current year of farming. More land was owned and operated in partnership operations than in

a single proprietorship. Mean acres operated by partnerships increased 45.4 percent from the first year (317 acres to 461 acres) to the current year. There was a 44.2 percent increase in mean number of acres operated by young farmers as individual operators from the first year of farming to the current year. Single proprietors were operating a mean number of 238 acres which was nearly equal to the average sized farm (235.7 acres) in Iowa during 1968. It was in the sixth year of farming that the highest percentage of operators were farming larger farms and had purchased more land. The number of young men who owned some land during the first year of farming was 1539, or 11.3 percent; whereas 37.2 percent of the operators owned some of the land they operated in their ninth year of farming.

Two-thirds of the operators used a crop share lease their first year and 61.8 per ent during the current year of farming. The number of respondents who used cash share leases nearly doubled between the first and current year of farming. It was still, however, the least used of all leases. The number reporting written leases was only 50 percent of the total number who had leases. Only 14.5 percent of the total partnerships had written agreements. Not one operator in the study reported that his farm was incorporated.

Fathers accounted for 41.4 percent of the landlords who were relatives of the respondent for the first year of farming and 45.7 percent for the current year.

Thirty percent (4,087) of the respondents were involved in partnership operations during their first year of farming in contrast to 3,023 or 22.1 percent, for their current year. There were relatively few (213 first

year and 287 current year) three-man partnerships. Less than one-third of the two-man partnerships during the first year and 23.3 percent during the current year were operating farms not larger than 160 acres. A total of 11,187, or 82.1 percent, reported they had not changed their form of farming operation from the first year to the current year of farming. The division of labor, operating expenses, and profits of partnership operations in this study was quite variable. Labor was divided nearly 50-50 between the respondent and his partner. The majority of the men provided 26 to 50 percent of the operating expenses in both the first and current years of farming. In the two-man partnerships there was nearly an even distribution of profits between the young farm operators (51.3 percent) and the partners (48.7 percent) at the 26 to 50 percent level of profits.

There were only 696, or 8.1 percent, of the first year individual operators; 105, or 2.6 percent, of the first year partnerships; and 89, or 2.9 percent, of the current year partnerships that did not produce corn on their farms during these years. Forty percent for the first year and 24.4 percent of the current year operators did not produce soybeans. Individual operators did not produce as many acres of oats as did those in partnerships. The mean number of acres of permanent pasture reported by young farm operators was greater than expected. Young farm operators participated in the feed grain program to a greater extent as they became established in farming.

Hogs were produced to the greatest extent of any species of livestock by young farm operators. Two-thirds of the respondents raised hogs and the number ranged from a low of 105 head per year for those operators who farmed

as individuals their first year to a high mean number of 434 head for partnership operations during their current year. Approximately 50 to 60 percent of the young farmers had feeder cattle, 25 percent had dairy and beef cows, 15 percent had sheep, and 15 percent had poultry.

Operating expenses increased from the first to the current years of farming for both single proprietors and partnerships. Two-thirds of the respondents had net farm incomes of $1,000 to $5,000 during their first year of farming; whereas nearly one-half (49.3 percent) had net farm incomes to $2,500 to $7,500 during the current year.

Pearson coefficients of correlation were used to indicate interrelationships. There was not a high relationship among any of the variables except the obvious ones such as total acres operated with total crop acres.

Young farm operators were not very active in educational programs. Over one-third never attended young or adult farmer meetings, but several did not have the opportunity since there was only a mean of 56.4 vocational agriculture departments in Iowa that offered young farmer programs in the years 1958 to 1968. Nearly one-half attended extension meetings and clinics while less than 10 percent had participated in Iowa State University short courses.

A comparison of factors affecting the establishment of young farm operators by economic area of the state is presented in Table 1. The Western Livestock Area (I) had the largest percentage, 3669, or 26.9 percent, of young farm operators in the state, whereas the Southern Pasture Area (II) had the smallest percentage, 1987, or 14.6 percent. The

Table 1. Factors affecting the establishment of young farm operators by economic areas of Iowa

| Factor | Economic areas I | | II | | III | | IV | | V | | State | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| No. operators | 3669 | 26.9 | 3280 | 24.1 | 2264 | 16.6 | 2430 | 17.8 | 1987 | 14.6 | 13630 | 100.0 |
| Present age | 26 | | 26 | | 27 | | 27 | | 26 | | 26.2 | |
| Highest grade | 12 | | 12 | | 12 | | 12 | | 12 | | 12 | |
| Years of 4-H | 2 | | 2 | | 3 | | 3 | | 3 | | 2 | |
| Years voc.ag. | 1 | | 3 | | 1 | | 1 | | 2 | | 2 | |
| Age start.farm. | 22 | | 21 | | 22 | | 22 | | 21 | | 21.6 | |
| Yrs. between age 18 and start. to farm | 4 | | 3 | | 4 | | 4 | | 3 | | 4 | |
| Jobs from age 18 and start. farm. | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | |
| Yrs. worked off farm | 2 | | 3 | | 2 | | 2 | | 4 | | 2 | |
| Jobs done off farm while farm. | 1 | | 1 | | 1 | | 1 | | 2 | | 1 | |
| Yrs. op. a farm | 5 | | 6 | | 5 | | 6 | | 5 | | 5.5 | |
| As indiv. | 3 | | 4 | | 5 | | 4 | | 4 | | 4 | |
| As partner | 2 | | 4 | | 1 | | 1 | | 1 | | 1 | |
| As owner | 0 | | 0 | | 1 | | 0 | | 1 | | 0 | |
| Part owner | 0 | | 1 | | 1 | | 1 | | 1 | | 1 | |
| Acres op. 1st yr | 202 | | 167 | | 219 | | 215 | | 249 | | 205 | |
| Acres op. 1968 | 281 | | 238 | | 248 | | 270 | | 331 | | 271 | |
| No. partic. in young farm. class | 996 | 23.5 | 1414 | 33.3 | 703 | 16.6 | 762 | 17.9 | 368 | 8.7 | 4243 | 100.0 |
| Ext. meetings | 1363 | 21.9 | 1866 | 30.6 | 1015 | 16.4 | 1378 | 22.2 | 589 | 9.5 | 6211 | 100.0 |
| ISU short course | 105 | 9.3 | 283 | 24.8 | 273 | 24.0 | 254 | 20.4 | 221 | 19.5 | 1136 | 100.0 |
| Com.Co. Meetings | 2778 | 26.8 | 2488 | 23.9 | 1795 | 17.3 | 2176 | 21.0 | 1141 | 11.0 | 10378 | 100.0 |

Northeast Dairy Area (III) with 2264, or 16.6 percent, and the Eastern Livestock Area (IV) with 2430, or 17.8 percent, were nearly equal in numbers of young farm operators. A total of 3280, or 24.1 percent, of the respondents were located in the Cash Grain Area (II) of Iowa. Differences in the numbers of operators were due to overall population differences, size of counties, and size of farms within the counties. There was a range in size of counties from 14 to 27 townships per county. In the Southern Pasture Area the mean farm size was 44 acres larger than the average of the state for the respondents' first year of farming, and 60 acres larger during the current year of farming.

There were no differences among areas of the state in the education attainment level of the young operators. The mean number of years of education was the same (12 years) for all areas with a mean of 12 years for the state of Iowa.

The mean number of years that the farm operators were members of 4-H was 2 for the state, but this varied from 2 to 3 years by the various areas. Young farmers who resided in Areas III, IV, and V had more mean years of 4-H (3 years) than those who resided in Areas I and II (2 years).

Of those young farm operators who had been enrolled in high school vocational agriculture, those who were located in the Cash Grain Area (II) had more years of training (3 years) than any other. The mean number of years of vocational agriculture for respondents in Areas I, III, and IV was only one year, whereas, it was two years for the state average, and for those who farmed in Area V.

It was interesting to note that in all areas of the state, except the Southern Pasture and Cash Grain Areas, young farmers had a mean age of 22 years when they began farming. They were 21 years old in these two areas, and there was a mean age of 21.6 years for the state. Evidently young men began farming at an older age when they had a livestock operation as was expected in Areas I, III, and IV. Since the respondents did not begin farming until they were 22 or 23 years of age, there would naturally be a lapse of three to four years from the time they were 18 years of age until they started farming.

Young men in all areas of the state had a mean number of 2 occupations from the time they were 18 years of age until they began farming. As it was reported, the data indicated a range of 0 to 9 occupations held by the young men before they began farming. Young operators who resided in the livestock areas of the state did not work off the farm to supplement their income as much as those who lived in the Cash Grain Area and the Southern Pasture Area. The mean number of years that respondents had been farming was 5.5 years. Those who farmed in the Southern Pasture Area had worked off their farms while farming for a mean of 4 years. Due to the unequal distribution of the number of respondents in the various areas, the mean number of off-farm jobs resulted in 2 for the state of Iowa, even though there was a range in the mean of 2 to 4 occupations. Off-farm custom work was the most reported occupation by the respondents.

The mean number of years that young farmers in this study (5.5 years) operated a farm was similar for all areas of the state. Fewer respondents

(mean of 3 years) in the Northeast Dairy Area farmed as individual operators and more farmed in partnership (mean of 2 years) than in the remaining areas of the state. The Northeast Dairy Area had the largest mean (5 years) for the average years farmed by young men who had farmed as individual operators. The respondents who had farmed in partnership did not have exceptionally large dairy enterprises. Since Northeast Iowa is considered to be the dairy area of the state, the large dairy partnerships may have not been included, or possibly, dairy farmers do not farm in partnership as much as do other farmers. The Northeast Dairy and Southern Pasture Area were the only areas in which some of the respondents operated their entire farms as owners. This may also account for the greater number of individual operators. Some young men farming as part-owners were reported in all areas of the state except in the Western Livestock Area. The respondents who were part-owners had farmed for a mean of one year as part-owners in the other areas of the state.

The mean farm size of the young operators in this study was above the state average for the respondents' current year of farming in all areas of the state. The largest farms were reported by young farm operators who resided in the Southern Pasture Area with a mean of 249 acres during the first year, and 331 acres during the current year. The smallest farms were located in the Cash Grain Area of Iowa. Young farmers in the Northeast Area increased their mean number of acres operated between their first year to the current year by only 29 acres, whereas, young farm operators in the Southern Pasture Area increased their acreage by 82 acres during the same period.

As one made a comparison within areas of the state of those young farm operators who had participated in educational programs, striking differences were found. The respondents who resided in the Cash Grain Area of Iowa participated to a greater extent in all types of programs listed except those conducted by commercial companies. Those who lived in the Southern Pasture Area participated less than those in the other areas in all the programs listed. One may conclude that the young farmers in the Cash Grain Area had more time to participate in such educational programs; however, the author does not have evidence in this study to prove this conclusion right or wrong. Only 9.3 percent of those participants in Iowa State University short courses lived in the Western Livestock Area which was the smallest group for this educational activity.

The major differences among economic areas of the state were (1) the number of young farm operators per area, (2) years of vocational agriculture in high school, (3) years worked off the farm while farming, (4) years farmed as an individual operator, (5) size of farms in acres, and (6) participation in educational programs.

Information pertaining to factors which affected the establishment of young farm operators by the years they started to farm is presented in Table 2. Comparisons were made of the young operators stratified by the year they began farming, 1956-1960, 1961-1964, and 1965-1968. Those respondents who began farming during the 1965 to 1968 period comprised 41.6 percent, or 5,662 of the 13,630 young men. The 1961 to 1964 group consisted of 4978, or 36.5 percent, whereas the 1956 to 1960 group had 2990,

Table 2. Factors affecting the establishment of young farm operators by years they started to farm

| Factors | Years started to farm 56-60 | % | 61-64 | % | 65-68 | % |
|---|---|---|---|---|---|---|
| | No. | | No. | | No. | |
| Number of operators | 2990 | 21.9 | 4978 | 36.5 | 5662 | 41.6 |
| Form of farming operation first year | | | | | | |
| Individual operators | 1971 | 20.7 | 3228 | 33.8 | 4344 | 45.5 |
| Partnership | 982 | 26.6 | 1609 | 42.9 | 1157 | 30.9 |
| Combination | 36 | 10.6 | 141 | 1.6 | 162 | 47.8 |
| Form of farming operation 1968 | | | | | | |
| Individual operators | 2401 | 22.6 | 3792 | 35.8 | 4414 | 41.6 |
| Partnerships | 516 | 22.7 | 935 | 41.0 | 827 | 36.3 |
| Combination | 73 | 9.8 | 251 | 33.7 | 421 | 56.5 |
| | Mean | | Mean | | Mean | |
| Highest grade completed | 12 | | 12 | | 12 | |
| Post high school education | 0 | | 1 | | 1 | |
| Years as a 4-H member | 3 | | 2 | | 2 | |
| Years enrolled in Voc. Ag. | 2 | | 2 | | 1 | |
| Age when starting to farm | 19 | | 21 | | 23 | |
| Jobs done before farming | 1 | | 2 | | 3 | |
| Years worked off the farm | 3 | | 3 | | 2 | |
| Number of off-farm jobs | 1 | | 1 | | 1 | |
| Acres operated first year | 185 | | 229 | | 201 | |
| Acres owned first year | 67 | | 76 | | 73 | |
| Acres rented first year | 118 | | 153 | | 128 | |

Table 2. (Continued)

| Factors | Years started to farm 56-60 | % | 61-64 | % | 65-68 | % |
|---|---|---|---|---|---|---|
| | Mean | | Mean | | Mean | |
| Acres operated in 1968 | 346 | | 290 | | 229 | |
| Acres owned in 1968 | 106 | | 97 | | 79 | |
| Acres rented in 1968 | 240 | | 193 | | 150 | |
| Number of hogs fed (first year) | 117 | | 182 | | 107 | |
| (current year) | 298 | | 265 | | 166 | |
| Number of corn acres (first year) | 82 | | 81 | | 71 | |
| (current year) | 122 | | 107 | | 81 | |
| Gross farm income first year: | | | | | | |
| (individuals) | 5,594 | | $12,352 | | $ 8,314 | |
| (partnership) | 18,043 | | 22,105 | | 25,644 | |
| Total operating expenses first year: | | | | | | |
| (individuals) | 5,502 | | 8,955 | | 5,320 | |
| (partnership) | 10,132 | | 9,586 | | 17,768 | |
| Net farm income first year: | | | | | | |
| (individuals) | 1,917 | | 3,023 | | 2,147 | |
| (partnerships) | 2,562 | | 2,925 | | 2,943 | |
| Gross farm income 1968: | | | | | | |
| (individuals) | 27,575 | | 24,169 | | 12,851 | |
| (partnerships) | 41,962 | | 55,609 | | 52,914 | |
| Total operating expenses 1968: | | | | | | |
| (individuals) | 17,568 | | 15,771 | | 7,580 | |
| (partnerships) | 15,930 | | 26,464 | | 33,268 | |
| Net farm income 1968: (individuals) | 6,208 | | 6,440 | | 3,871 | |
| (partnerships) | 6,391 | | 6,451 | | 5,651 | |

or 21.9 percent, of the total respondents.

There were no differences in the means among groups concerning their educational attainment. Due to the uneven distribution of young farmers in the groups, the data show that the respondents who started to farm in the 1956 to 1960 period did not have any post high school education, but the others had a mean of one year. The young farmers who started to farm between 1956 and 1960 had a mean of 3 years of membership in 4-H, whereas those who began farming after 1960 had a mean of 2 years of 4-H membership. Young farm operators who started to farm during the 1965 to 1968 period had a mean of one year of vocational agriculture in high school which was less than had by the other groups.

The largest difference found in comparing the young farm operators by years they started to farm, was found in their age when they began farming. Those who started to farm between 1956 and 1960 had a mean age of 19 years; the 1961 to 1964 group had a mean of 21 years of age, whereas the 1965 to 1968 respondents had a mean age of 23 years when they began farming. In recent years many of the young men served in the military, or had some post high school education before they started to farm. They also had more years in agricultural and nonagricultural occupations. The respondents who began farming between 1956 and 1960 held only one occupation prior to farming while those who began farming in the 1965 to 1968 period had a mean of 3 occupations. After starting to farm those who began between 1965 and 1968 had a mean of 2 years of work off their farm, whereas the other two groups had a mean of 3 years of off-farm work.

There was no difference in the mean number of off-farm jobs done by the young farm operators after they began farming.

When the forms of farming operation were compared to the years the respondents started to farm, the major differences were in the numbers of combination operators. Thirty-six of the operators who began farming between 1956 and 1960 were combination operators in contrast to 162 of those who started farming in the 1965 to 1968 period. In 1968, 173 of those who started farming between 1956 and 1960 were combination operators, compared to 421 combination operators who started to farm during the 1965 to 1968 period. The numbers of individual operators and partnerships were in proportion to the number of operators who began farming during each of the time periods. The same pattern prevailed for both the first and current years of farming.

## IMPLICATIONS FOR EDUCATION

There is a definite need for increased emphasis by vocational agriculture teachers in Iowa to make young farmer educational programs an integral part of their overall vocational agriculture program. The vocational agriculture teacher may have had the young farmer as a student in high school during previous years and thus knows him personally and his occupational needs. The data indicate that 66.4 percent of the young

farmers had access to vocational agriculture in high school, and 88.7 percent of this number took advantage of such training.

Information shows there was a mean number of 8.54 young farm operators per township in this study. In 1968-1969 the median square miles per public school district in Iowa encompassed 103 square miles of land or approximately 3 townships, therefore approximately 25 men would be available for young farmer programs in each school district. Twenty five percent or less of the school districts in Iowa during 1968 had 71 square miles whereas 75 percent had 141.2 square miles in the school districts. For this reason the number of young farmers estimated per school district may be conservative.

The number of high school districts per county varied from a mean of 2.7 districts in the Southern Pasture Area to 6.5 in the Cash Grain Area of Iowa. In certain counties there would be many more than 25 young farmers per school district available for instruction in agriculture. In addition to those who were operators in this study would be those young men who were employed in occupations related to farming or those who were working on farms but were not classified as a farm operator. It was estimated that this number would vary by areas of the state, but one could expect an additional 5 men per school district. This would provide a total estimated number of 30 young men per school district for young farmer programs. Not all young farmers would participate in such educational programs, but the number should be adequate for effective programs.

The number of vocational agriculture departments conducting young farmer programs has been limited. During the 11-year period 1957 through

1967, the mean number of young farmer classes in Iowa conducted by vocational agriculture instructors was 55. The average enrollment per class was 17.6. There was a high of 85 classes in 1959-60 and a low of 31 classes in 1968. Reasons for the lack of emphasis on young farmer programs by vocational agriculture at the present time are: (1) the vocational agriculture teachers are now conducting programs or classes for adult farmers in which young farmers have been included, (2) the number of young men under 30 years of age who were farming was limited as compared to the number of high school students and adult farmers and vocational agriculture teachers felt there was not sufficient men in their community for an effective program, and (3) in most instances, the vocational agriculture teacher has a full-time teaching load without additional work. More two-teacher vocational agriculture departments may help to alleviate this situation.

The cooperative extension service also has a role to play in furthering the education of young farm operators. In past years the Cooperative Extension Service conducted a program titled the Farm and Home Development Program for young farm families. This program was reorganized in 1968 and is now titled the Farm and Home Business Management Program. The objectives for this extension sponsored program are to assist young farm families (40 years of age and under) to more systematically (a) assess their farm business resources and income potential, (b) assess their family resources and conditions conducive to the development and maintenance of a healthy home environment, (c) determine their best course of action, ranging from full-time farming to entering a different occupation and (d)

manage their farm business and personal affairs to more effectively reach their goals. It is an organized program to include 10 to 20 couples enrolled each year or a total of 30 to 60 families in the program at any one time. Young farmers also have the opportunity to participate in clinics and meetings conducted in their local communities by the extension service. The data revealed that 45.9 percent of the young farmers had attended such meetings.

Over three-fourths of the 13,630 young farmers in this study participated in meetings conducted by commercial companies. More respondents had attended this type of meeting than either those conducted by the extension service or vocational agriculture teachers. Usually feed, fertilizer, and implement companies conduct such meetings and serve the purpose of assisting the young farmer by keeping him informed on technological developments in agriculture.

Opportunities have been enlarged in recent years for young farm operators to further their education in agriculture. As a result of the passage of the Vocational Education Act of 1963, Area Vocational Technical schools have been developed in Iowa. During 1968-1969 Iowa had 11 centers offering 8 different vocational programs in agriculture with a total enrollment of 554 persons. Four centers were offering farm management programs for young men to attend on a full-time basis for a 1 to 2 year period. Another center offered a farm management program for veterans who were farming and attended classes for 6 to 12 hours per week. Young farmers have an opportunity to participate in area school agricultural programs prior to farming or even while farming.

Iowa State University has sponsored a special program for a number of years for young men who are farming or who plan to farm. Students (usually young farmers) enroll for six agricultural courses and are admitted as special students. Enrollment in this program has ranged from 39 to 169 students per quarter in recent years. Some students, approximately 10 percent, return for additional training after completing the Winter Quarter Farm Operation program. A few obtain a bachelor of science degree as a result of their initial enrollment in this program.

In 1967 a new curriculum was initiated at Iowa State University for young men who had an interest in agriculture but were not candidates for a degree program. This program is the Technical Institute in Agriculture curriculum. It was designed for young men who intended to be engaged in the occupation of farming or other agricultural occupations. The initial enrollment in 1967-1968 was 28 students and has grown to 51 students for the year 1968-1969. Most of the students enrolled in this program have the long time goal of being a farm operator.

Short courses have been sponsored by Iowa State University for young farmers for several years. Young farmers may attend those short courses held on the campus or the Farm Operation short courses conducted throughout the state. During 1968-1969 four such courses were held in 4 locations in the state with a total enrollment of 104 farm operators.

During recent years enrollment at all post high school educational institutions has increased and more young farmers are seeking advanced education. It is assumed that this trend will continue.

All educational agencies need to explore new and additional ways and means for assisting with the education of young farm operators of Iowa.

This heterogenous group of young men may be difficult to reach but have a need for more education than they are receiving at the present time.

## Content of Educational Programs

Two of the critical problems revealed by young farmers in this study were financial assistance and availability of land. Since it was next to impossible for the young farmer to accumulate enough capital to begin farming by himself, he had to rely upon some individual to assist him with financial backing. The person referred to for this assistance by nearly every young farm operator was the father. Fathers loaned machinery, capital and shared with the labor. For this reason educational agencies should do what is possible in their programs to promote desirable father-son relationships. Vocational agriculture and 4-H project programs for youth while they are in high school are means of promoting good father-son relationships as well as providing the young farmer with experience.

Capital requirements for establishment in farming are great. Young farmers in this study indicated that the cost of machinery and obtaining financial assistance were major obstacles for them. Parents were credited as being the most common source and provided the greatest amount of financial help, while banks and production credit associations were mentioned most frequently as commercial sources of credit. Young farmers need a source of financial backing as well as educational programs on money management. Evidently few young farmers have been candidates for Farmers Home Administration loans because it was not listed by many respondents as a source of financial help. Farmers Home Administration personnel

disclose their biggest problem is to have adequate government appropriations available for loan to young farm operators. Priority for loans is given to the young man who has farming experience which may account for the limited use by some farm operators in this study. In some instances young farmers are not aware of the availability of this type of loan. Education can help bridge this gap and assist the young farmer with his capital needs.

Machinery was the most costly item needed by the young operators. Several respondents borrowed a complete line of machinery during their first year and others borrowed various pieces of equipment. They also purchased machinery during their first year of farming. Custom work was done by a majority of young farmers to supplement their income while farming. Machinery management, therefore, is an area of needed instruction by young farmers.

Nearly all respondents in the study were involved with crops and livestock programs. In some instances the young farmer had limited crop acreage but an extensive livestock program; in others they had little or no livestock. Some programs were specialized, such as a few in turkey production, but the majority had diversified farming operations. Educational agencies need to provide instruction in technical agriculture to assist the young farmers as they develop their farming programs.

Slightly over 25 percent of the young farm operators began farming in partnership operations. This number declined to 16.7 during the current year of operation. Several respondents were farming the home farm, or land owned by a relative, and some had inherited land between the time

they began farming and the current year. Approximately 50 percent of the individual young operators in the study had written leases, and 14.5 percent of those in partnership, had written agreements. There were 35.5 percent of the respondents who said that instruction on legal transactions would be of "much" value to them. The author believes there are implications from this study for education on this topic. Instruction on legal transactions by the educational agencies mentioned previously would encompass such areas as transfer of property, incorporating the family farm, partnership arrangements and agreements, and the use of written leases which would be beneficial to the young farm operators.

## Methods in Instructional Programs

It was clearly demonstrated by the young operators that they were a group of young men with definite goals and purposes. If they were not fully occupied with their farming operations, and even sometimes if they had full scale programs, they worked off their farms to supplement their incomes. Young farmers, therefore, are ambitious, energetic people who need to have educational programs that will be of value and interest to them.

The personal visit to the young operator's farm by agricultural education personnel should be of vital importance to him in solving his real farm problems. Only 5.4 percent of those respondents in this study who were members of a young farmer program indicated that farm visits by the vocational agriculture instructor would be of much value, whereas 25.8 percent reported they had not had a visit from their instructor so they had no way to measure this activity.

Programs need to be developed on a year round schedule in order that the young farmers receive assistance on their problems as they arise. Only 15 percent of the young farmers in this study were not married; therefore, programs need to be organized in such a manner as to be of benefit and interest to the young man and his wife who are not only becoming established in farming but also is starting a home and family. As indicated by the young farmer response to suggested types of instructional activities, they considered field trips and tours as well as meetings conducted by the instructor or speakers as valuable to them. It may be noted by the data concerning the farming enterprizes that young farm operators were conducting extensive crops and livestock programs. They, therefore, have a need for educational programs which will assist them with these enterprises as well as record analysis of their farming operation.

New instructional media may be used in the teaching of young farm operators. Over two-thirds of the respondents in this study indicated they favored the use of video tape for instructional purposes. This media was used by Iowa State University in the conducting of the Farm Operators Short courses during the winter of 1968-1969 at four locations in Iowa. The purpose of using video tape for these short courses was to reduce the time and travel of resident teaching staff as well as present unusual items for instructional purposes. When farmers were asked to evaluate the use of video tape in instruction, their reactions ranged from dislike to full approval. Suggestions made for the use of video tape were (1) the farmer audience should be prepared for this type of instruction, (2) video tapes should not be used for lengthy periods (60 minutes) without a break

for discussion and (3) teaching materials need to be prepared especially for television use.

## Education for Off-Farm Income

Young farm operators reported they worked in a variety of occupations from the time they were 18 years of age until they began farming. This interim accounted for a mean of 3 to 4 years. During this period nearly one-third of the respondents worked on the parental home farm while the remainder were students, serving in the military, or involved with an agricultural or nonagricultural occupation.

As a result of the passage of the Vocational Education Act of 1963, provisions were made for agricultural occupation employment experience programs in high school vocational agriculture. In this program conducted by the vocational agriculture instructor, students have the opportunity to gain experience in agricultural occupations related to farming. Since some young men are employed in occupations other than farming, this experience program would be beneficial to the young farm operators in preparation for that occupation as well as for farming. Young men who definitely know they would be farming may be employed on a farm that would provide a more specialized education.

## Recommendations for Young Farmer Education

Young farm operators need more attention and instruction from educational agencies. Some educators believe the young farmer could attend general agricultural education functions which are now being held in the

various communities, so that it is not necessary to develop special programs for this age group. The author believes that young farmers have need for an organized instructional program to which they can be affiliated. Many of the men have been together as high school students and perhaps have a close association with one another. They share similar problems in that they are becoming established in farming and are starting a home and family.

A general feeling of optimism and a positive attitude toward farming was prevalent in the interviews with the young farmers of this study. They like farming. They want to succeed and are anxious for educational assistance. This age group of young men are eager to use innovations and keep abreast of technological developments. Their capital is limited, but they are willing to use management ideas that will produce profitable returns. Young farmers are a group that will make use of the ideas, theories, and practices presented to them. As a group they are a challenge to agricultural educators.

Before making recommendations for educational programs for the young farm operators of Iowa, it is necessary to list and clarify some basic assumptions and facts. They are as follows:

1. There were 13,630 young farm operators, 30 years of age or under, in Iowa during 1968.
2. There is a need for organized educational programs for these young farm operators.
3. The number of young farmers who will continue their education

after high school will increase in future years. It is assumed that Land Grant Universities, Area Community Colleges, and Vocational Technical schools will continue to develop and expand their curriculums to meet the needs of young farm operators.

4. The number of young farmers varies among areas of the state, counties, townships, and school districts; there are, however, adequate numbers in each county and school district to permit effective programs.
5. Not all young farm operators will be interested or willing to participate in such educational programs. It is estimated that at least 20 to 25 percent of the young men will not participate.
6. Two educational agencies, namely the county extension service and the public school vocational agriculture departments, (high school and area vocational-technical school) already have limited organized programs for young farmers. These two should be the ones to expand and further develop needed programs for those young men who are farming.
7. It is assumed that the above named agencies would utilize the services of and cooperate with the other educational agencies, such as Production Credit Association, Farmers Home Administration, Iowa Farm Business Association, Soil Conservation Service, Agricultural Stabilization Conservation Service, and others.
8. In order for the public high school vocational agriculture departments to expand their educational programs to include young farmer education, additional teachers of vocational agriculture

will be needed. It will be necessary for an increase in the number of multiple teacher vocational agriculture departments.

Recommendations for young farm operator educational programs follow:

1. Land Grant Universities should continue to provide educational programs for training of young farm operators. These young men need a post high school formal educational program prior to their entry in farming. Enrollments have risen in recent years and should continue to increase in these programs. The Winter Quarter Farm Operation curriculum at Iowa State University should emphasize courses which will be practical and applicable to the young farm operator. The two and four year curriculums should be beneficial to those young men who desire a more comprehensive education. The newly developed 2 year Technical Institute in Agriculture program at Iowa State University should be appropriate for the young men who are not suited for a college credit program but desire advanced education for farming.
2. Area vocational technical schools have been and should continue to develop programs for young farm operators. Their programs may be designed to prepare the young man for farming or to assist him while farming. Veterans classes, which are now sponsored by the area vocational technical schools, should be continued and expanded to meet the needs of these young men.
3. Each high school vocational agriculture department (234 departments) in Iowa should have a young farmer program. It is esti-

mated there are sufficient numbers in each school district to provide a group of 20 to 30 young men.

4. Each county in Iowa under the direction of the county extension director and with the assistance of area extension personnel should develop a Farm and Home Business Management program for young farm operators in their county. It is estimated that each county may expect to enroll 30 to 40 young men in this program. In counties with few or no vocational agriculture departments, it is imperative that the extension service provide this program.
5. Programs need to be organized on a year around basis in order to meet the problems of young farmers as they arise.
6. The year around program should include group educational projects, tours or trips, recreational activities, family events, on farm instruction, as well as instruction in agricultural mechanics and technical agriculture.
7. Emphasis of these programs should be in the areas of money management, record analysis, crops and livestock management, machinery management, legal transactions, and family living.

In order to implement the above educational program recommendations for young farm operators, the following considerations need to be made:

1. Land Grant Universities and Area Vocational Technical schools need to keep current with the problems and needs of young farm operators and develop their programs and curriculums accordingly.
2. Emphasis must be given to this program by the Agricultural Education Section of the State Department of Public Instruction. Young

farmer programs need the same emphasis as do adult farmer programs. Possibly there should be changes in the requirements for these programs relating to (1) age of enrollees, (2) number of meetings, (3) time and place of meetings, (4) types of activities and (5) reimbursement policies.

3. The Agricultural Education Department at Iowa State University can assist by training more teachers of vocational agriculture, and make it possible for student teachers to obtain training in centers where effective young farmer programs are being conducted.
4. Public school administrators need to recognize the need and appreciate the value of such educational programs. Provisions need to be made for multiple teacher vocational agriculture departments.
5. The Iowa Cooperative Extension Service will need to set priorities on their Farm and Home Business Management program and achieve the goal of one program per county. Staff may need to be trained especially for these programs.

For too many years the educational programs for young farm operators have been neglected. They are a formative group who need educational help.